IN THE CLAIMS:

Please cancel amend and add claims as follows:

1. (Currently Amended) A method for fabricating a MTJ cell of a MRAM, comprising the steps of:

forming a pinned ferromagnetic layer on a connection layer;

forming a tunnel barrier layer on the pinned ferromagnetic layer using a semiconductor film that is a pure Group IV semiconductor film; and

forming a free ferromagnetic layer on the tunnel barrier layer.

2. (Canceled).

3. (Currently Amended) ~~The method according to claim 1,~~ A method for fabricating a MTJ cell of a MRAM, comprising the steps of:

forming a pinned ferromagnetic layer on a connection layer;

forming a tunnel barrier layer on the pinned ferromagnetic layer using a semiconductor film, wherein the semiconductor film is a Group IV semiconductor film having Group III ~~or Group V~~ elements added thereto; and

forming a free ferromagnetic layer on the tunnel barrier layer.

4. (Currently Amended) ~~The method according to claim 1,~~ A method for fabricating a MTJ cell of a MRAM, comprising the steps of:

forming a pinned ferromagnetic layer on a connection layer;

forming a tunnel barrier layer on the pinned ferromagnetic layer using a semiconductor film, wherein the semiconductor film is a ~~compound~~ Group IV semiconductor film ~~which includes~~ having ~~Group III elements and~~ Group V elements added thereto; and

forming a free ferromagnetic layer on the tunnel barrier layer.

5. (New) The method according to claim 1, wherein said tunnel barrier layer has a thickness ranging from 2 to 20 nm.

6. (New) The method according to claim 1, wherein said pure Group IV semiconductor film is Ge.

7. (New) The method according to claim 6, wherein said tunnel barrier layer has a thickness ranging from 2 to 20 nm.

8. (New) The method according to claim 1, wherein said pure Group IV semiconductor film is Si.

9. (New) The method according to claim 8, wherein said tunnel barrier layer has a thickness ranging from 2 to 20 nm.

10. (New) The method according to claim 3, wherein said tunnel barrier layer has a thickness ranging from 2 to 20 nm.

11. (New) The method according to claim 3, wherein said Group IV semiconductor film is Ge.

12. (New) The method according to claim 3, wherein said Group IV semiconductor film is Si.

13. (New) The method according to claim 4, wherein said tunnel barrier layer has a thickness ranging from 2 to 20 nm.

14. (New) The method according to claim 4, wherein said Group IV semiconductor film is Ge.

15. (New) The method according to claim 4, wherein said Group IV semiconductor film is Si.